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Note by the Secretary-General

The Secretary-General has the honour to transmit to the Security Council the seventeenth quarterly report on the activities of the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC) (see annex). It is submitted by the Acting Executive Chairman of UNMOVIC in accordance with paragraph 12 of Security Council resolution 1284 (1999) of 17 December 1999.

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Annex

Seventeenth quarterly report on the activities of the United Nations Monitoring, Verification and Inspection Commission submitted in accordance with paragraph 12 of Security Council resolution 1284 (1999)

I. Introduction

1. The present report, which is the seventeenth[a] submitted in accordance with paragraph 12 of Security Council resolution 1284 (1999), covers the activities of the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC) during the period from 1 March to 31 May 2004.

II. Developments

2. During the period under review, the Acting Executive Chairman has continued the practice of briefing the respective Presidents of the Security Council, representatives of Member States and officials of the Secretariat on the activities of UNMOVIC.

3. During the period, no official information was made available to UNMOVIC on either the work or the results of the investigations carried out in Iraq by the Iraq Survey Group, led by the United States of America, nor did the Survey Group request any information from UNMOVIC. While the Commission has examined the publicly released portion of the testimony given by Charles Duelfer, the head of the Survey Group, on 30 March before the United States Senate's Armed Services Committee, it has not had access to the full text. The provision of detailed supporting information relating to the public testimony would assist UNMOVIC and the International Atomic Energy Agency (IAEA) in discharging their mandate to continue to assess Iraq's weapons of mass destruction activities.

4. In his testimony, the head of the Iraq Survey Group noted that the Group continued to look for weapons of mass destruction. He also said he did not believe that the Survey Group had sufficient information and insight at that time to make final judgements with confidence as to Iraq's weapons of mass destruction programmes and to determine the truth of their existence. He said that more work had to be done to gather critical information about the regime, its intentions and its capabilities. He also pointed to a number of practical difficulties facing his team, including security, delays in translating documentation and the continued reluctance of Iraqi personnel to speak freely.

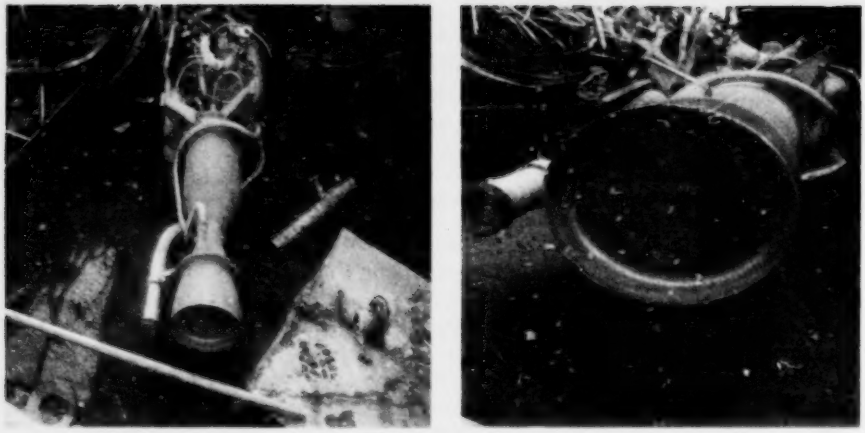
5. Mr. Duelfer's publicly released testimony mentions, as an example of uncertain Iraqi intent, that the Tuwaitha Agricultural and Biological Research Centre had equipment suitable for the production of biological agents and that research work there on the bacterium *Bacillus thuringiensis* would be important to a biological weapon programme. UNMOVIC and its predecessor, the United Nations

[a] The Commission's 16 previous reports were issued as documents S/2000/516, S/2000/835, S/2000/1134, S/2001/177, S/2001/515, S/2001/833, S/2001/1126, S/2002/195, S/2002/606, S/2002/981, S/2002/1303, S/2003/232, S/2003/580, S/2003/844, S/2003/1135 and S/2004/160.

Special Commission, inspected that site on numerous occasions for similar reasons and had categorized it as being subject to intensive monitoring. The site was also inspected regularly by IAEA. The testimony also refers to new information on unmanned aerial vehicles being developed and on long-range ballistic missile development. While the Commission has considerable knowledge of Iraq's unmanned aerial vehicle programmes and long-range missiles, the testimony is not sufficiently detailed for the Commission's experts to determine the extent to which such information was known to UNMOVIC.

6. The Commission's experts are conducting an investigation in parallel with the IAEA Iraq Nuclear Verification Office regarding the discovery of items from Iraq that are relevant to the mandates of UNMOVIC and IAEA at a scrapyard in the Netherlands. In particular, following a visit of IAEA to a scrapyard in Rotterdam to investigate increased radiation readings, it was discovered, through photographs taken at the time, that engines of SA-2 surface-to-air missiles were among the scrap (see figure below). They are the type of engines used in the Al Samoud 2 proscribed missile programme. In addition, a number of items and equipment that may also be relevant to the UNMOVIC mandate were seen among the scrap. The existence of missile engines originating in Iraq among scrap in Europe may affect the accounting of proscribed engines known to have been in Iraq's possession in March 2003. Both IAEA and UNMOVIC have kept the Security Council informed of this matter.

7. A team of Commission experts visited the site concerned in the Netherlands and examined one missile engine that had been salvaged from the scrap metal process. By comparing the serial production number on the engine with information in the UNMOVIC database, the experts were able to confirm that the engine was one from an SA-2 missile that had been tagged by United Nations inspectors in the past and had not been declared as having been fired. Representatives of the scrapyard company indicated that a number of similar engines (5 to 12) had been seen in the scrapyard in January and February of this year. More engines could have been processed and passed through the yard unnoticed. Company staff confirmed that other items made of stainless steel and other corrosion-resistant metal alloys bearing the inscription "Iraq" or "Baghdad" had been observed in shipments delivered from the Middle East since November 2003. A number of items were examined and sampled on-site by UNMOVIC experts with a portable metal analyser and were determined to be composed of inconel and titanium — both dual-use materials subject to monitoring. Photographs of other materials bearing Arabic script were taken.



SA-2 engine found in a scrapyard in Rotterdam, the Netherlands

8. Despite the active cooperation of the Government of the Netherlands and the company concerned, it was not possible to determine how many other engines and other material previously subject to monitoring in Iraq may have passed through this scrapyard (or others). It should also be noted that the scrapyard that was visited by UNMOVIC deals in high-quality stainless steel. Items and equipment made of dual-use materials subject to the provisions of the monitoring plan may also be coming out of Iraq to other destinations. The Commission is continuing its investigation.

9. In addition, the Commission is aware from comparative analysis of recent satellite imagery that a number of sites previously known to have contained equipment and materials subject to monitoring have been either cleaned out or destroyed. An example of such imagery is provided in the appendix to the present report. It is not known whether such equipment and materials were still present at the sites during the time of coalition action in March and April of 2003. However, it is possible that some of the materials may have been removed from Iraq by looters of sites and sold as scrap.

10. The Commission's imagery experts have compiled a short report on the uses of imagery and the Commission's capabilities in this area. An appendix summarizing this work is attached.

III. Compendium of proscribed weapons and programmes

11. One of the issues currently under examination by UNMOVIC in the framework of work on the compendium is the evaluation of Iraq's procurement network that operated from 1999 to 2002, the period in which inspectors were absent from Iraq. During this period, Iraq utilized a sophisticated procurement network for the acquisition of foreign materials, equipment and technology. It consisted of State-owned trading companies, established and controlled by the Military Industrialization Commission of Iraq, with branches in foreign countries, Iraqi private sector and foreign trading companies operating in Iraq and abroad, multiple intermediaries, chains of foreign suppliers of items and materials, bank accounts and

transportation companies. In several instances, the Iraqi State-owned trading companies had shares in foreign trading companies or were closely affiliated with local private trading companies.

12. The prime purpose of the evaluation is to identify whether this network has been used for the acquisition of proscribed single-use or notifiable dual-use items and materials that could have been utilized by Iraq in a biological, chemical or missile programme.

13. The bulk of the data for the evaluation came from the semi-annual monitoring declarations of Iraq, procurement information obtained during the course of inspection activities in Iraq from November 2002 to March 2003, notes of interviews and discussions with Iraqi officials and electronic files retrieved through the forensic computer exploitation carried out at facilities and establishments involved in procurement. The computer files alone constitute some 12,000 pages of procurement documents, most of which are in Arabic. The following are preliminary findings of the ongoing examination.

14. In general, from 1999 to 2002 Iraq procured a variety of dual-use biological and chemical items and materials, including chemicals, equipment and spare parts. To date, UNMOVIC has found no evidence that these were used for proscribed chemical or biological weapon purposes. Although some of the goods may have been acquired by Iraq outside the framework of mechanisms established under Security Council resolutions, most of them were later declared by Iraq to UNMOVIC in its semi-annual monitoring declarations.

15. However, in several instances Iraq provided misleading declarations regarding the suppliers and sources of the items and materials as well as procurement channels, claiming that they had been purchased on the local market. It appeared that they had been procured outside Iraq through private trading companies operating both in and outside of the country. There is much evidence that from 1999 to 2002 Iraq procured materials, equipment and components for use in its missile programmes. In several instances, the items procured were used by Iraq for programmes, such as the production of Al Samoud 2 missiles, that were determined by UNMOVIC in February 2003 to be proscribed. This can be illustrated by the acquisition of at least 380 SA-2 missile engines for Iraq's prime missile establishment by an Iraqi Government-owned trading company controlled by the Military Industrialization Commission through a local Iraqi trading company and a foreign trading company. UNMOVIC is currently analysing documents available to it in order to establish the source of the engines procured through the local trading company and of any additional SA-2 engines (or other missile-related items) that might have been procured by Iraq since 1999.

16. The same Iraqi governmental trading company was involved, through a contract with two foreign private companies, in procuring components and equipment for the manufacture and testing of missile guidance and control systems, including inertial navigation systems with fibre-optic and laser ring gyroscopes and Global Positioning System equipment, accelerometers, ancillary items and a variety of production and testing equipment. The list of items sought includes several that were not declared or shown to UNMOVIC during the course of its inspections. One Iraqi trading company was also involved in the procurement, through private trading companies, of different pieces of missile-related production equipment and technology. Several foreign private subcontractors were responsible for the

implementation of specific parts of the general contract. UNMOVIC is in the process of assessing the possible applications of items and technology outlined in that contract.

17. UNMOVIC is trying to identify the extent to which these contracts have been fulfilled and what has actually been delivered to Iraq as well as the sources of items, materials, components and technology.

IV. Other activities

18. Work on possible modifications to the ongoing monitoring and verification plan approved by the Security Council in its resolution 715 (1991) continues to take into consideration the changed circumstances in post-sanctions Iraq and the experience of monitoring operations carried out in the past. As mentioned in previous reports, this work also takes into account the need to harmonize the lists of items and technologies to which the export/import monitoring mechanism, approved by the Security Council in its resolution 1051 (1996), applies. The export/import lists were revised in 2001, whereas the annexes of items and materials subject to the ongoing monitoring and verification plan have not been updated since 1995.

V. Other issues

Information technology and non-inspection sources of information

19. The updating of the UNMOVIC database and the electronic archiving of documents are continuing.

20. The Office for Outside Information maintains contacts with representatives of Member States that have provided information to UNMOVIC pertaining to Iraq's proscribed weapon programmes. The Office continues to collect and analyse material from open sources that may be relevant to the work of the Commission. Photographic interpretation of post-war commercial satellite imagery of sites in Iraq relevant for inspection and monitoring is an ongoing activity.

Field offices

21. UNMOVIC maintains a core staff of 10 local nationals in Baghdad. They have inventoried and are protecting the non-expendable UNMOVIC and IAEA equipment remaining in the Canal Hotel, including the laboratories and the mobile chemical laboratory. The majority of the original 29 UNMOVIC local staff in Baghdad have found employment with the United Nations Assistance Mission for Iraq (UNAMI). The families of the two UNMOVIC national staff who were killed on 19 August 2003 have received their pension awards.

22. The Cyprus Field Office stores and maintains UNMOVIC inspection and monitoring equipment recovered from Iraq. On 6 April the Field Office moved to a more secure office location at the Larnaca airport, next to the UNMOVIC warehouse. Additional security precautions have been taken, including the installation of anti-shatter film on the windows, security cameras and blast curtains, incorporating lessons learned from the attack on the United Nations headquarters in Baghdad. The Field Office has shipped detection equipment and protective gear

from the warehouse to support a biological advanced course in the United Kingdom of Great Britain and Northern Ireland in March and a multidisciplinary advanced course in Austria in May. Also in May, the remote monitoring surveillance servers and cameras (25 systems) intended for use in monitoring in Iraq were inspected. The batteries were reconditioned to ensure that the systems were ready for rapid deployment, and the Field Office staff were trained to maintain the systems. Whenever appropriate, the Field Office staff provided logistical support to UNAMI flight operations.

Staffing

23. With regard to staffing, there has been no change in the numbers since the previous report. UNMOVIC core staff in the Professional grades at Headquarters totals 51 weapon experts and other personnel drawn from 24 nationalities; of those, 9 are women.

Technical visits, meetings and workshops

24. An UNMOVIC missile expert attended a seminar on unmanned aerial vehicles: missions, links and payloads, in Washington, D.C., to obtain an update on unmanned aerial vehicle technologies, programmes and trends. The objective was to be better informed as to how such vehicles might possibly be used or modified in ways relevant to ongoing monitoring.

25. An UNMOVIC expert attended a workshop in Washington, D.C., on biological threats and security hosted by the National Academy of Sciences and the United Nations Foundation. UNMOVIC staff also attended a workshop in London at which the challenges in verifying alleged production and use of biological agents and effective inspection modalities were discussed.

26. UNMOVIC biological and chemical experts met with representatives of leading companies in the areas of production, quality control, screening and sensors applied in the biological area during a conference and exhibition in New York. In addition, UNMOVIC staff attended a technology demonstration at the Aberdeen Proving Ground in Maryland, United States of America, featuring hand-held and portable devices for on-site detection, identification and monitoring of chemical and biological agents. New technologies will be integrated into UNMOVIC detection and safety-screening capability.

Training

27. During the reporting period UNMOVIC continued its training activities, in particular for experts from its roster. Specifically:

- A training course for biological experts on the roster was conducted from 23 February to 5 March, in Swindon, United Kingdom. The course, organized with the support of the British Government, was devoted to augmenting practical inspection skills to be used in monitoring inspections of biological sites. Thirteen experts from as many Member States attended the course. A practice inspection of a biological facility offered by the British Government was also conducted during the course.
- Another training course for the experts was conducted from 19 to 30 April at UNMOVIC headquarters in New York. This course focused on the

identification and inspection of dual-use biological and chemical production equipment. There were 17 participants from 9 countries.

- Enhanced training of Headquarters staff in equipment used in field operations and monitoring has continued.

- A multidisciplinary course was conducted in Vienna from 17 to 28 May with 22 participants from 14 countries and IAEA in attendance. This was the first course conducted with the objective of developing capabilities to carry out inspections by multidisciplinary teams and to conduct inspection data integration and analysis on a multidisciplinary and cross-disciplinary basis. The course included practical inspection exercises at a multi-purpose research facility and a visit to a plant for the production of remotely piloted vehicles. The Commission is grateful to the Government of Austria for the support it provided for the conduct of the course.

28. The Commission remains grateful to those Governments which have supported its training activities.

VI. College of Commissioners

29. The UNMOVIC College of Commissioners convened in Vienna for its sixteenth regular session on 25 May. As on previous occasions, observers from IAEA and the Organization for the Prohibition of Chemical Weapons attended.

30. In his introductory statement to the College, the Acting Executive Chairman outlined the work done by UNMOVIC staff since the previous meeting of the College. A briefing on the work undertaken to date on the compilation of a compendium of the nature and extent of Iraq's past proscribed weapons and programmes was provided to the College. Another briefing was on the Commission's informal analysis of the publicly released statement by the head of the Iraq Survey Group, following his appearances to the United States Congress in March of this year. Commission experts also briefed the College on the ongoing investigation of the discovery of Iraqi missile engines in a scrapyard in the Netherlands. In the light of the recent media reports on the finding in Iraq of a 155-millimetre shell containing the chemical nerve agent sarin, the Commission's experts also outlined what it knew of Iraq's programme in that area.

31. The College expressed its appreciation for the Acting Executive Chairman's comprehensive introductory statement and for the various detailed briefings on the ongoing work of UNMOVIC, particularly the work on the compendium and the comments on the testimony of the head of the Iraq Survey Group. It noted with concern the removal from Iraq of items that had been subject to monitoring and the destruction of sites associated with Iraq's weapon programmes and the possible implications both activities might have for the confirmation of disarmament and future ongoing monitoring. There was also a discussion of the future role of UNMOVIC and the use of its expertise. The College noted that the mandate of UNMOVIC to verify the disarmament of Iraq and to conduct ongoing monitoring and verification was still in place. The College underlined that the priority of UNMOVIC was to maintain its readiness to resume operations in Iraq until the Council revisits the mandate, as set out in paragraph 11 of resolution 1483 (2003).

32. Further consultations will be held with the members of the College on the date of the next session.

33. In accordance with paragraph 5 of resolution 1284 (1999), the Commissioners were consulted on the content of the present report.

Appendix

Imagery, remote-sensing and geographic information systems: capabilities and practices of the United Nations Monitoring, Verification and Inspection Commission*

Introduction

1. The United Nations Monitoring, Verification and Inspection Commission (UNMOVIC) has made extensive use of remote-sensing and geographic information systems as part of its inspection planning tools and information/data management and analysis. The technological advances in software of recent years and the increased commercial availability of satellite imagery have allowed UNMOVIC to build up an independent information-gathering, search and analytical capability not previously available.

Remote sensing

2. Remote sensing is the science of acquiring information from a place or area without having an actual physical presence. This is achieved by sensing and recording reflected or emitted energy from the object in question. The image type employed depends on the goal to be achieved. For example, in preparing an on-site inspection it requires mapping and locating all structures and facilities within the area of interest. In the past, UNMOVIC was heavily dependent on Member States for imagery and the interpretation of it. The advantages of using commercial satellite imagery include self-reliance, flexibility and the timely delivery of information.

Inspection planning and data gathering

3. To prepare for an inspection or for data gathering, it is now possible to have, in a relatively short time, global high-resolution imagery of the areas of interest. Commercially available imagery now has a resolution of 0.60 metres. This compares with 10-metre resolution in 1991 when the United Nations Special Commission was established and 1-metre resolution in 2000 when UNMOVIC was set up. Resolution is a measure of the smallest object that can be determined by the sensor, or the area on the ground represented by each picture element (known as a pixel). Examples of the end product at different levels of resolution follow (see figures A.1-A.3 below).

* Imagery derived from the Quickbird satellite and obtained by UNMOVIC from Digital Globe.

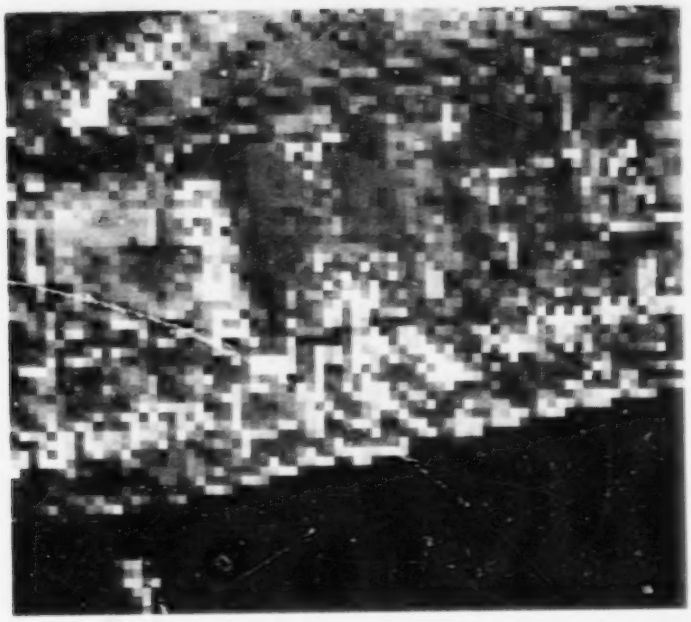


Figure A.1 Spatial resolution, 10 metres

Figure A.2 Spatial resolution, 5 metres

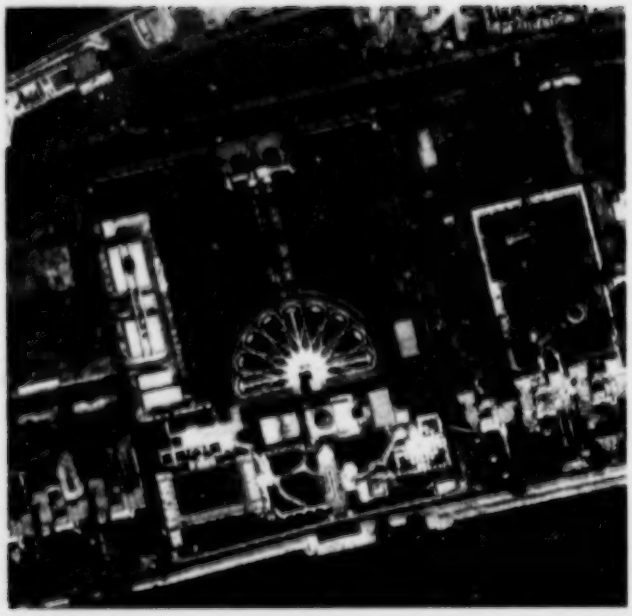


Figure A.3 Spatial resolution, 1 metre

4. Primarily, the imagery used for mapping and for creating line diagrams by UNMOVIC is derived from satellites whose spatial resolutions are 1 metre and 0.60 metre. Other satellites with a coarser spatial resolution are also used. As these larger spatial resolution images are able to produce an overview of bigger districts or the entire country, they are ideal for producing maps or diagrams with a larger scale.

5. The information gathered from the imagery results in the determination of the status of a site (activity), its layout and dimensions and possible function of particular structures. The UNMOVIC standards for producing these types of maps has been shared with the United Nations Geographic Information Working Group for possible wider use by other United Nations bodies that may take advantage of remote-sensing technology. UNMOVIC has recently provided technical assistance to produce maps derived from satellite imagery for the Department of Peacekeeping Operations in order to map borders. The standards developed by UNMOVIC were applied to the resulting product. There is continuous cooperation with the International Atomic Energy Agency as well as exchanges of imagery.

Monitoring capabilities

6. In addition to the mapping of sites in Iraq, remote-sensing data captured by satellites can be used to monitor specific sites over a certain period of time. Computer software has been developed that can search for changes in the physical configuration of sites or areas within two or more specific satellite images from different time frames. However, the value of this for short-term monitoring can be

limited by the fact that satellites pass a certain point of the Earth only at a particular time. This "revisiting time" varies between platforms. Some satellites have a revisiting time of one day, whereas other satellites revisit the same area every few days.

Recent findings

7. While sites in Iraq were being monitored for updates through satellite imagery, it was detected that some sites subject to monitoring by UNMOVIC had been cleaned up and equipment and material had been removed from the sites (see figures A.4 and A.5 below). In other areas, whole buildings that had previously contained equipment and materials subject to monitoring had been completely dismantled. The work continues to cover all known sites in Iraq.

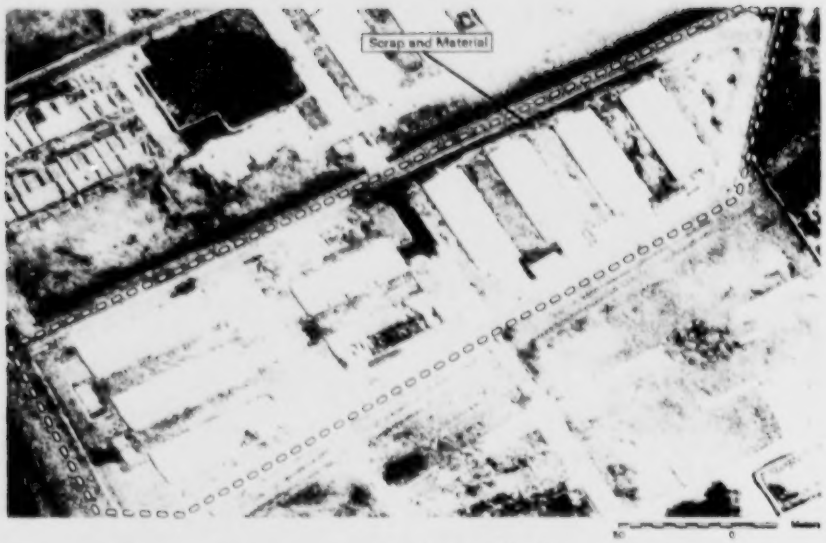


Figure A.4 Shumokh store site overview (28 May 2003)

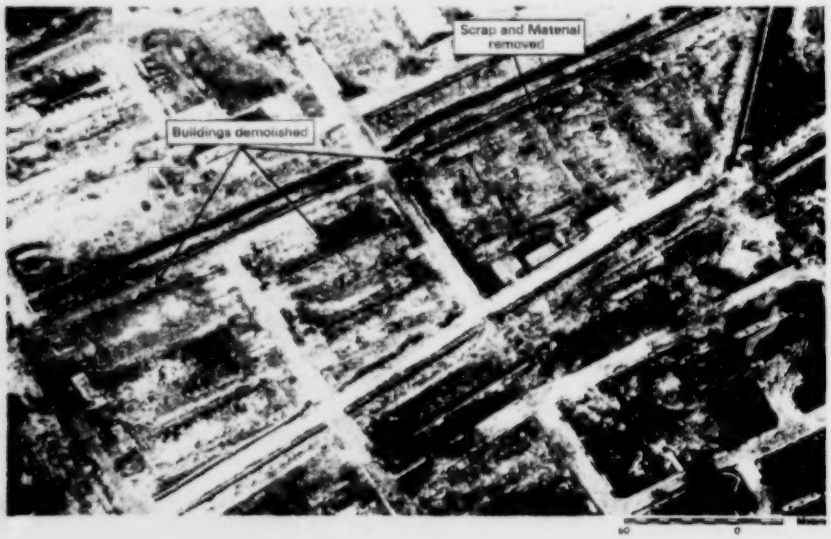


Figure A.5 Dismantled Shumokh store site (22 February 2004)

Geographic Information System

8. The Geographic Information System is a commercially available computer software system capable of storing, analysing, capturing and displaying geographically referenced material from the Commission's various databases and is used extensively by UNMOVIC. All the available information about a particular geographic site or area (maps, photographs, imagery, inspection reports, etc.) is pulled together and made available to the analyst. GIS and remote-sensing techniques are combined to create customized information layers in the various maps and line diagrams produced. The information extracted from the imagery can be directly linked to the existing database through data links. It can be used for data management and for the production of overview maps, specific maps, boundary maps and line diagrams from the Commission's extensive collection of maps, imagery and other data.